



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,620	02/19/2002	Irada Ben-Gal	01/21716	9559

7590 12/27/2005
Martin D. Moynihan
PRTSI, Inc.
P. O. Box 16446
Arlington, VA 22215

EXAMINER

SHARON, AYAL I

ART UNIT PAPER NUMBER

2123

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/076,620	BEN-GAL ET AL.	
	Examiner	Art Unit	
	Ayal I. Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/20/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/07/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Claims 1-51 of U.S. Application 10/076,620, originally filed on 02/19/2002, have been presented for examination. The application claims priority to U.S. Priority Application 60/269,344, filed 02/20/2001.

Information Disclosure Statement

2. In regards to the following Hebrew language reference,

Zinger G., Ben-gal I., "An Information Theoretic Approach to Statistical Process Control of Auto-correlated Data", Proc. of the Industrial Engineering and Management Conference, Beer Sheva, May 3-4, 2000, pp. 194 -199 (In Hebrew)

Applicants are reminded of their obligation under 37 C.F.R. 1.98(a)(3), as follows:

(3)(i) A concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from applicant's specification or incorporated therein.

(3)(ii) A copy of the translation if a written English-language translation of a non-English-language document, or portion thereof, is within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

Claim Objections

3. Claims 19, 21, and 22 are objected to because of the following informalities:

"prestored" should be "pre-stored". Merriam-Webster's Collegiate Dictionary, 10th

Ed., © 2001, does not contain an entry for "prestored". Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of copending Application No. 10/468,101. The conflicting claims are identical, with one exception: the preamble of claim 1 in the instant application recites "time related symbols", while the preamble of claim 1 in the co-pending application recites "spatially related symbols". Dependent claims 2-11 in both applications

inherit this difference. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of "time related symbols" instead of "spatially related symbols" is one of intended use.

6. Claims 19-36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 28-31 and 33-46 of copending Application No. 10/468,101. The conflicting claims are identical, with one exception: the preamble of claim 19 in the instant application recites "time related symbols", while the preamble of claim 28 in the co-pending application recites "spatially related symbols". The dependent claims in the applications inherit this difference. Although the conflicting claims are not identical, they are not patentably distinct from each other because the use of "time related symbols" instead of "spatially related symbols" is one of intended use.
7. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. **Claims 1-18 and 51 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

10. Claims 1-18, as written, appear to be directed to un-embodied computer software, and therefore constitute functional descriptive material; see MPEP Section 2106, subsection IV.B.1(a).
11. Claims 1-18 and 51, as written, also appear to be directed to an abstract mathematical algorithm that is not implemented in the technological arts (e.g. computer-implemented, or embodied on a computer readable medium). The claimed invention is therefore not concrete or tangible. See MPEP §2106 (A), and *In re Warmerdam*, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459.

Claim Interpretations

12. Examiner interprets that Claims 19-50 are tangibly embodied in a computer, in light of the "prestored model" limitation recited in claim 19. Examiner interprets that the "prestored model" implies storage in a mechanical device, as opposed to recorded in a book or on a piece of paper. See *In re Lowry*, 32 USPQ 2d 1031 (Fed.Cir. 1994); *In re Bernhart*, 163 USPQ 611, 615 (CCPA 1969).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. The prior art used for these rejections is as follows:

- a. Rissanen, J. "A Universal Data Compression System." IEEE Transactions on Information Theory. Sept. 1983. Vol. 29, Issue 5, pp.656-664. (Hereinafter "**Rissanen**").
- b. Weinberger, M.J., Rissanen J.J., et al. "A Universal Finite Memory Source." IEEE Transactions on Information Theory. May 1995. Vol. 41, Issue 3, pp.643-652. (Hereinafter "**Weinberger**").
- c. Weisstein, E.W. "Relative Entropy." From Mathworld – A Wolfram Web Resource. <http://mathworld.wolfram.com/RelativeEntropy.html>. Printed Dec. 9 2005. (Hereinafter "**Weisstein**").
- d. Naranjo, S.E. et al. "Resampling Software for Analysis and Validation of Enumerative and Binomial Sampling Plans." Undated. Printed Dec. 9

2005. <http://www.wcrl.ars.usda.gov/software/rvspman.html>. (Hereinafter "Naranjo").

16. The claim rejections are hereby summarized for Applicants' convenience. The detailed rejections follow.

17. Claims 1-21 and 26-51 rejected under 35 U.S.C. 103(a) as being unpatentable over Rissanen in view of Weinberger.

18. In regards to Claim 1, Rissanen teaches the following limitations:

1. Apparatus for building a stochastic model of a data sequence, said data sequence comprising time related symbols selected from a finitesymbol set, the apparatus comprising:

an input for receiving said data sequence,

(See Rissanen, especially "III. A Context Gathering Algorithm")

a tree builder for expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node, and

(See Rissanen, especially "III. A Context Gathering Algorithm")

However, Rissanen does not expressly teach the following limitations:

a tree reducer for reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence.

Weinberger, on the other hand, does expressly teach this limitation (See Weinberger, Section I, "Introduction").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Rissanen with those of

Weinberger, because Weinberger expressly teaches (See Weinberger, Section I, "Introduction") an improvement to the Rissanen algorithm that "overcomes the state explosion problem and is both simple to implement and to analyze."

19. Examiner notes that the instant application claims priority to provisional application 60/269,344. By Applicants' own admission in p.28 of the provisional application, the tree-building context algorithm is taught in both Rissanen and in Weinberger. Moreover, by Applicants' own admission in p.29 of the provisional application, the tree reducing (pruning) algorithm is taught in the Weinberger reference.

20. Examiner also notes that the Shmilovici reference (see p.1, para.3), the Morag reference (see p.200, last para.), and the Zinger reference (see p.194, para.2), all of which were is co-authored by the applicants and cited in the IDS filed 10/10/7/02, teach that the "Context Tree" algorithm was developed in the Rissanen and Weinberger articles.

21. In regards to Claim 2, Weinberger teaches the following limitations:

2. Apparatus according to claim 1, said tree reducer comprising a tree pruner for removing from said tree any node whose counter values are within a threshold distance of counter values of a preceding node in said tree.

By Applicants' own admission in p.29 of the provisional application, this is taught in the Weinberger reference.

22. In regards to Claim 3, Weinberger teaches the following limitations:

3. Apparatus according to claim 2, wherein said threshold distance and tree construction parameters are user selectable.

By Applicants' own admission in p.29 of the provisional application, this limitation is taught in the Weinberger reference. See also Weinberger, p.648, Section V, para.1, which refers to "the resulting compression is asymptotically optimal to any desired accuracy ..."

23. In regards to Claims 4-11, by Applicants' own admission in p.29 of the provisional application, the claimed limitations are taught in the Weinberger reference.

24. In regards to Claims 12-18, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

25. In regards to Claim 19, Rissanen teaches the following limitations:

19. Apparatus for determining statistical consistency in time sequential data, the apparatus comprising a sequence input for receiving sequential data,

a stochastic modeler for producing at least one stochastic model from at least part of said sequential data,

(See Rissanen, especially "III. A Context Gathering Algorithm")

However, Rissanen does not expressly teach the following limitations:

and a comparator for comparing said sequential stochastic model with a

prestored model, thereby to determine whether there has been a statistical change in said data.

Weinberger, on the other hand, does expressly teach these limitations.

Weinberger teaches in p.646, Section III, first paragraph, that:

The algorithm has two stages, the first for growing a large tree and the second for selecting from that tree a distinguished context to define the function $s(x^t)$ and hence the complete trees T_t .

Weinberger also teaches “estimates of the parameters of the optimally fitting tree machine” on p.648, Section IV, first paragraph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Rissanen with those of Weinberger, because Weinberger expressly teaches (See Weinberger, Section I, “Introduction”) an improvement to the Rissanen algorithm that “overcomes the state explosion problem and is both simple to implement and to analyze.”

26. Examiner notes that the instant application claims priority to provisional application 60/269,344. By Applicants’ own admission in p.28 of the provisional application, the tree-building context algorithm is taught in both Rissanen and in Weinberger. Moreover, by Applicants’ own admission in p.29 of the provisional application, the tree reducing (pruning) algorithm is taught in the Weinberger reference.

27. Examiner also notes that the Shmilovici reference (see p.1, para.3), the Morag reference (see p.200, last para.), and the Zinger reference (see p.194, para.2), all of which were is co-authored by the applicants and cited in the IDS filed 10/10/7/02, teach that the “Context Tree” algorithm was developed in the Rissanen and Weinberger articles.

28. In regards to Claim 20, Rissanen teaches the following limitations:

20. Apparatus according to claim 19, wherein said stochastic modeler comprises:

(See Rissanen, especially “III. A Context Gathering Algorithm”)

a tree builder for expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node, and

(See Rissanen, especially "III. A Context Gathering Algorithm")

However, Rissanen does not expressly teach the following limitations:

a tree reducer for reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence.

Weinberger, on the other hand, does expressly teach this limitation (See Weinberger, Section I, "Introduction").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Rissanen with those of Weinberger, because Weinberger expressly teaches (See Weinberger, Section I, "Introduction") an improvement to the Rissanen algorithm that "overcomes the state explosion problem and is both simple to implement and to analyze."

29. In regards to Claim 21, Weinberger teaches the following limitations:

21. Apparatus according to claim 19, said prestored model being a model constructed using another part of said time-sequential data.

See Weinberger p.646, Section III, first paragraph.

30. In regards to Claim 26, Weinberger teaches the following limitations:

26. Apparatus according to claim 22, wherein said statistical distance comprises an MDL statistic.

Weinberger teaches the use of the "MDL principle" on p.646, right column, last paragraph.

31. In regards to Claim 27, Weinberger teaches the following limitations:

27. Apparatus according to claim 22, wherein said statistical distance comprises a Multinomial goodness of fit statistic.

Weinberger teaches the use of the fitting data on p.644, left column, second paragraph, and p.644, right column, Section II, last paragraph. See also p.648, Section IV, first paragraph.

32. In regards to Claim 28, Weinberger teaches the following limitations:

28. Apparatus according to claim 22, wherein said statistical distance comprises a Weinberger Statistic.

Weinberger expressly teaches the use of a context selection rule (see p.647, right column, Eq.15) that use a statistic s_t that "denotes the longest path in the intersection of T_t and T_t . Examiner interprets that this corresponds to the claimed "Weinberger Statistic."

33. In regards to Claim 29, Weinberger teaches the following limitations:

29. Apparatus according to claim 20, said tree reducer comprising a tree pruner for removing from said tree any node whose counter values are within a threshold distance of counter values of a preceding node in said tree.

Weinberger expressly teaches the use of a context selection rule (see p.647, right column, Eq.15) that use a statistic s_t that "denotes the longest path in the intersection of T_t and T_t . Examiner interprets that this corresponds to the claimed "threshold distance".

34. Claims 30-43 are identical to claims 3-12, 14-16 and 18, and therefore are rejected on the same grounds.

35. In regards to Claims 30-38, the claims are identical to claims 3-11, and therefore are rejected on the same grounds. Applicants' own admission in p.29 of the provisional application, the claimed limitations are taught in the Weinberger reference.

36. In regards to Claims 39-43, the claims are identical to claims 12, 14-16, and 18, and therefore are rejected on the same grounds. Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

37. In regards to claims 44-47, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

38. In regards to Claim 48, Weinberger teaches the following limitations:

48. Apparatus according to claim 22, wherein said data sequence comprises time sequential image data sequences said model being usable to determine a statistical distance therebetween.

Weinberger expressly teaches the use of a context selection rule (see p.647, right column, Eq.15) that use a statistic s_t that "denotes the longest path in the intersection of T_t and T_t . Examiner interprets that this corresponds to the claimed "statistical distance".

39. In regards to claims 49-50, Examiner interprets the Applicants' claims to be directed to mere intended uses of the invention.

40. In regards to Claim 51, Rissanen teaches the following limitations:

51. Method of building a stochastic model of a data sequence, said data sequence comprising time related symbols selected from a finite symbol set, the method comprising:

receiving said data sequence,

(See Rissanen, especially "III. A Context Gathering Algorithm")

expressing said symbols as a series of counters within nodes, each node having a counter for each symbol, each node having a position within said tree, said position expressing a symbol sequence and each counter indicating a number of its corresponding symbol which follows a symbol sequence of its respective node, and

(See Rissanen, especially "III. A Context Gathering Algorithm")

However, Rissanen does not expressly teach the following limitations:

reducing said tree to an irreducible set of conditional probabilities of relationships between symbols in said input data sequence, thereby to model said sequence.

Weinberger, on the other hand, does expressly teach this limitation (See Weinberger, Section I, "Introduction").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Rissanen with those of Weinberger, because Weinberger expressly teaches (See Weinberger, Section I, "Introduction") an improvement to the Rissanen algorithm that "overcomes the state explosion problem and is both simple to implement and to analyze."

41. Examiner notes that the instant application claims priority to provisional application 60/269,344. By Applicants' own admission in p.28 of the provisional application, the tree-building context algorithm is taught in both Rissanen and in Weinberger. Moreover, by Applicants' own admission in p.29 of the provisional application, the tree reducing (pruning) algorithm is taught in the Weinberger reference.

Art Unit: 2123

42. Examiner also notes that the Shmilovici reference (see p.1, para.3), the Morag reference (see p.200, last para.), and the Zinger reference (see p.194, para.2), all of which were is co-authored by the applicants and cited in the IDS filed 10/10/7/02, teach that the "Context Tree" algorithm was developed in the Rissanen and Weinberger articles.

43. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rissanen in view of Weinberger and further in view of Weisstein.

44. In regards to Claim 22,

22. Apparatus according to claim 19, said comparator comprising a statistical processor for determining a statistical distance between said stochastic model and said prestored model.

Weinberger teaches an equation (see p.647, left column, last equation) for cross-entropy that is used as a "context selection rule." Weinberger's equation corresponds to the "Relative Entropy" equation taught in Weisstein.

Weisstein teaches that the "relative entropy" equation is "also called the Kullback-Leibler distance." Examiner interprets that the Kullback-Leibler distance reads on the claimed limitation.

It would have been obvious to one of ordinary skill in the art to modify the teachings of Weinberger with those of Weisstein, because Weisstein teaches that "[r]elative entropy is a very important concept in quantum information theory, as well as statistical mechanics (Qian 2000)".

45. In regards to Claim 23, it is rejected on the same grounds as claim 22.

23. Apparatus according to claim 22, said statistical distance being a KL statistic.

46. In regards to Claim 24, it is rejected on the same grounds as claim 22.

24. Apparatus according to claim 22, said statistical distance being a relative complexity measure.

47. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over

Rissanen in view of Weinberger and further in view of Weisstein and further in view of Naranjo.

48. In regards to Claim 25, Weinberger does not expressly teach the following limitations:

25. Apparatus according to claim 22, wherein said statistical distance comprises an SPRT statistic.

Naranjo, on the other hand, expressly teaches (see p.8) that Wald's SPRT statistic dates back to 1947.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Weinberger with those of Naranjo, because the use of Wald's SPRT as a threshold value was old and well known at the time the invention was made.

Conclusion

49. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.

50. U.S. Patent 5,986,591 to Willems et al. (Teaches the pruning of context trees.

See abstract, and col.1)

51. U.S. Patent 6,542,640 to Morihara et al. (Teaches the use of context trees in Figs. 2A and 2B).
52. U.S. Patent 5,907,637 to Murashita et al. (Teaches the use of a context tree for data compression).
53. U.S. Patent 5,903,676 to Wu et al. (Teaches the use of the Rissanen algorithm. See columns 1-3).
54. U.S. Patent 5,640,159 to Furlan et al. (Teaches the use of the Rissanen algorithm. See column 8).
55. U.S. Patent 6,801,141 to Yang et al. (Post-dates the filing date of the instant application. (Cites the Rissanen reference. See list of references cited).
56. Qian, H. "Relative Entropy: Free Energy Associated with Equilibrium Fluctuations and Non-Equilibrium Deviations." Physical Review E, 2001. Vol.63, pp.042103/1-042103/4. <http://arxiv.org/abs/math-ph/007010> (Cited in the Weisstein reference, with a July 8, 2000 date).
57. Weinberger, M. et al. "Sequential Model Estimation for Universal Coding and the Predictive Stochastic Complexity of Finite-State Sources." Proc. IEEE Int'l Symposium on Info. Theory. Jan 17-22, 1993, p.52. (An additional article by Weinberger and Rissanen).

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:


USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

or hand carried to:

USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
December 11, 2005


Paul L. Rodriguez 12/12/05
Primary Examiner
Art Unit 2125